REMARKS

Claims 1-27 remain pending in the application. All claims stand rejected . In response, certain claims have been amended and new claims (claims 28-36) have been added to more distinctly and clearly claim the applicants' invention. Support for the new claims is found at least on specification page 15, lines 16-24. Reconsideration and further examination are requested.

Claim Rejections Under § 103

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) based on US 5,815,126 to Fan et al. in view of GB 2,149,553 to Crossland et al. Claims 5 and 25-27 stand rejected under 35 U.S.C. § 103(a) based on Fan in view of Crossland and further in view of US 5,673,059 to Zavracky et al. Claims 6-8, 10-19 and 21-24 stand rejected under 35 U.S.C. § 103(a) based Fan in view of Crossland and Zavracky. And claims 9 and 20 stand rejected under 35 U.S.C. § 103(a) based on Fan in view of Crossland and Zavracky and further in view of US 5,634,080 to Kikinis et al.

Fan discusses various portable communication systems, but does not teach or suggest an active display having an active area less than 10 mm^2, as acknowledged by the Examiner. As for Crossland, that reference describes data terminals and other devices in which visual display devices (VDUs) are used. These VDUs have 60,000 or more picture elements with a transistor or transistors controlling the voltage on each picture element. Although the Examiner relies on Crossland (see, e.g., page 12 of the Office Action) for teaching a liquid crystal display with an active area of less than 100 mm^2, Crossland specifically mentions at page 1, lines 88-90 that the displays have a display area "from 15 mm^2 up to the full size of a silicon slice." In fact, all of Crossland's examples of displays shown in FIGs. 1-9 and described in the specification have display areas greater than 1 cm^2. Crossland says nothing about smaller displays nor anything about the particular advantages of a display with a small display area.

Accordingly, Crossland does not teach or suggest an active matrix liquid crystal display with "an active area of less than 10 mm^2," as required by amended claims 1, 6, and 12. Among other advantages of applicants' invention, by reducing the size of the display, a larger number of displays can be fabricated from a single wafer. Hence, the manufacturing yield can be

substantially increased and the cost per display can be significantly reduced. Furthermore, the display is lighter and more compact, and thus more portable.

Thus, the reliance on Crossland in combination with Fan does not make obvious the invention described in amended claims 1, 6, and 12. Furthermore, neither Zavracky nor Kikinis overcome the deficiencies of Fan and Crossland for at least the reasons stated above. The rejection of claims 1, 6, and 12 is therefore believed to be overcome. Because the other claims depend from claims 1, 6, and 12, the reasons for allowance of claims 1, 6, and 12 apply as well to the dependent claims.

Furthermore, the applicants note that this application shares common inventors with Fan and Zavracky. If the rejection is maintained, the applicants can claim priority to both Fan and Zavracky to obviate the rejection.

Reconsideration of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Regarding Double Patenting

Claims 1-27 have been provisionally rejected under the judicially-created doctrine of double patenting based on claims 1-27 of co-pending Application No. 08/741,671, claims 1-25 of co-pending Application No. 08/766,607, claims 1-40 of co-pending Application No. 08/810,646, and claims 1-5 and 7-19 of co-pending application No. 08/853,630. The applicants wish to place these rejections in abeyance until the claims are finalized. A Terminal Disclaimer will be filed to obviate these rejections once the claims are otherwise allowable.

CONCLUSION

In view of the above amendments and remarks, it is believed that all pending claims (Claims 1-36) be allowed so the application can be passed to issue. If it is believed that a telephone conference might expedite prosecution of this case, the Examiner is invited to telephone the undersigned attorney at (978) 341-0036.

Respectfully submitted,
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Dated: November 13, 2001

MARKED UP VERSION OF AMENDMENTS

Specification Amendments Under 37 C.F.R. § 1.121(b)(1)(iii)

Replace the paragraph at page 16, lines 3 through 12 with the below paragraph marked up by way of bracketing and underlining to show the changes relative to the previous version of the paragraph.

Further details regarding the fabrication of each die on a wafer can use the methods described in U.S. Patent No. 5,256,562, the contents of which incorporated herein in its entirety by reference. Additional details regarding the fabrication of the active matrix and use within communication systems [is] are described in U.S. Patent Application No. [08/961,746] 08/961,744, filed October 31, 1997 of Matthew Zavracky and titled "Color Display with Thin Gap Liquid Crystal" the contents of which is incorporated herein in its entirety by reference.

Claim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

1. (Twice Amended) A portable communications device having a reflective display comprising:

a device housing having a wireless receiver;

an active matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than [160] 10 mm^2;

a lens that [magnifies] focuses an image on the display for viewing by a user;

a light emitting diode light source optically coupled to the display;

a display control circuit positioned in the housing and [that is] connected to the wireless receiver, the matrix display, and the light source such that image data that is received by the receiver is input to the display control circuit, which generates a display signal to drive the electrodes; and

an optical coupler that couples light from the light source onto the matrix display and the reflected light through the lens.

3. (Amended) The reflective display of claim 2 further comprising a color sequential display circuit coupled to the matrix display and the control circuit.

5. (Amended) The reflective display of claim 3 wherein [the light directing device is] the optical coupler includes a dichroic prism interposed between the lens and the matrix display.

6. (Twice Amended) A portable communications device having a reflective color sequential display comprising:

a device housing having a wireless receiver;

an active matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than [160] 10 mm^2;

a lens for viewing the display and spaced from the display;

a plurality of light emitting diodes that sequentially illuminate the display;

a color sequential display control circuit positioned in the housing and [that is] connected to the wireless receiver, the matrix display, and the light [source] emitting diode such that image data that is received by the receiver is input to the display control circuit which generates a display signal to drive the pixel electrodes and [sequentially illuminating the display with] and a timing signal to drive the light emitting diodes;

a dichroic prism for directing the light from the light [source] emitting diodes to the active matrix liquid crystal display and coupling reflected light to the lens; and

a battery for powering the matrix display, display control circuitry and the light emitting diodes.

7. (Amended) The device of claim 6 further comprising a diffuser positioned between the light [sources] emitting diodes and the dichroic prism.

8. (Amended) The device of claim 7 further comprising at least one dichroic mirror for directing the light from one light emitting diode and allowing light from another light emitting diode to pass through.

12. (Twice Amended) A portable communications device having a reflective display comprising:

a device housing having a wireless receiver;

an active matrix liquid crystal display having an array of at least a 640 x 480 array of reflective pixel electrodes and an active area of less than [160] 10 mm^2, a transistor circuit formed with single crystal silicon associated with each pixel electrode;

a lens that [magnifies] focuses an image on the display for viewing by a user;

a plurality of light emitting diodes;

a display control circuit positioned in the housing and [that is] connected to the wireless receiver, the matrix display, and the light [source] emitting diodes such that image data that is received by the receiver is input to the display control circuit, which generates a display signal to drive the pixel electrodes; and

a dichroic prism for directing the light from the light emitting diodes to the active matrix liquid crystal display and coupling reflected light to the lens.

15. (Amended) The device of claim 12 further comprising a diffuser positioned between the light emitting diodes and the dichroic prism.

16. (Amended) The device of claim 12 further comprising a pair of dichroic mirrors, each mirror [for] directing the light from one light emitting diode and allowing light from at least another light emitting diode to pass through.

22. (Amended) The device of claim [21] 12 further comprising a pair of dichroic mirrors, each mirror for directing the light from one light emitting diode and allowing light from at least another light emitting diode to pass through.